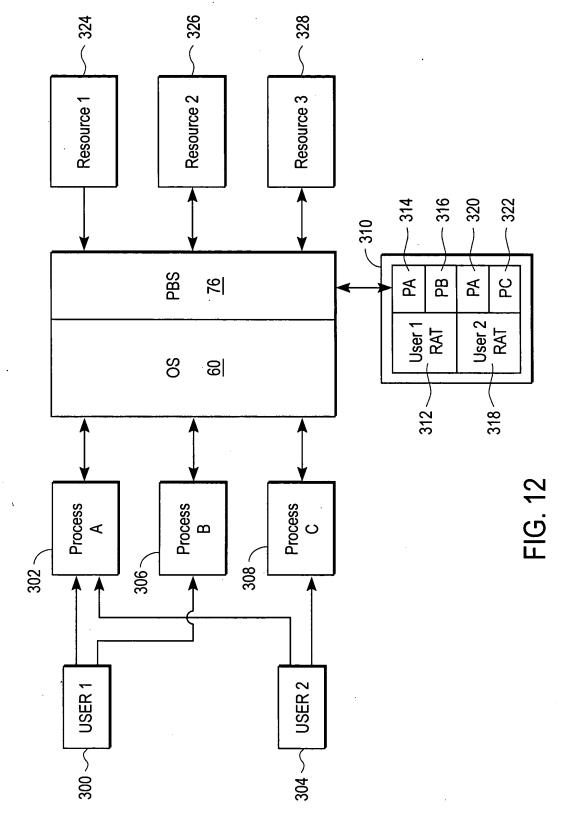Rplacement Sheet
Application No.: 10/635,755
Title: Financial Transaction Server
With Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

FIG. 12

Rplacement Sheet
Application No.: 10/635,755
Title: Financial Transaction Server With
Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

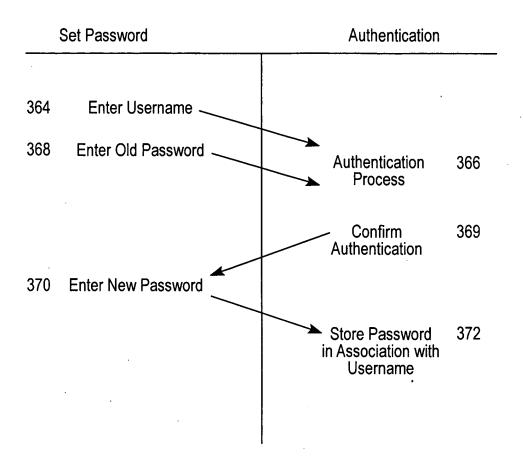| User/Client	Process With Authentication Call (LOGIN.EXE)	Authentication Module
330 Initiate Authentication	Request Random 332 Number (RN)	
		Generate RN 334
324 Enter Username Password		Modify Process 336 Task Structure
		Store RN 338
		Send RN 340
344 Generate Hash (Password + RN)		
346 Send Username Hash		
		Check Process Task 348 Structure for Pending Authentication
		Retrieve RN 350
		Retrieve Password 352 Associated with Username
		Generate Hash 354 (Password + RN)
		Compare Hash Values 356
		Modify Process Task 358 Structure
		Confirm Authentication 360 Set User = Username
	362 Set User = Username	

FIG. 13

Rplacement Sheet
Application No.: 10/635,755
Title: Financial Transaction Server With
Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

Set Password   Authentication

364   Enter Username

368   Enter Old Password

                                    Authentication   366
                                       Process

                                    Confirm   369
                                    Authentication

370   Enter New Password

                                    Store Password   372
                                    in Association with
                                        Username

FIG. 14

Rplacement Sheet
Application No.: 10/635,755
Title: Financial Transaction Server
With Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

Key Exchange

Client	Server
374 Request Key Exchange	
375 Send Username	Modify Task Structure 376
377 Enter Password (PW)	Generate RN 1 378
	Send RN 1 380
382 Calculate Hash $H(PW, RN1)$	Retrieve Password (PW) 382 Associated with Username
	Calculate Hash 384 $H(PW, RN1)$
386 Key 1 = $H(PW, RN1)$	Key 1 = $H(PW, RN1)$ 388
	Generate RN2 390
	Send RN2 392
394 Calculate Hash $H(PW, RN2)$	Calculate Hash 396 $H(PW, RN2)$
400 Key 2 = $H(PW, RN2)$	Key 2 = $H(PW, RN2)$ 398
	Modify Task Structure 402

FIG. 15

Rplacement Sheet
Application No.: 10/635,755
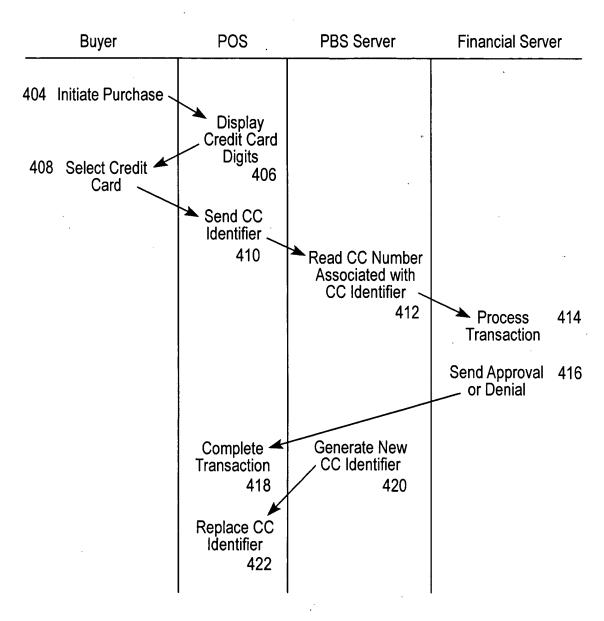Title: Financial Transaction Server With
Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

Buyer	POS	PBS Server	Financial Server

404 Initiate Purchase

Display
Credit Card
Digits
406

408 Select Credit
Card

Send CC
Identifier
410

Read CC Number
Associated with
CC Identifier
412

Process 414
Transaction

Send Approval 416
or Denial

Complete
Transaction
418

Generate New
CC Identifier
420

Replace CC
Identifier
422

FIG. 16

Rplacement Sheet
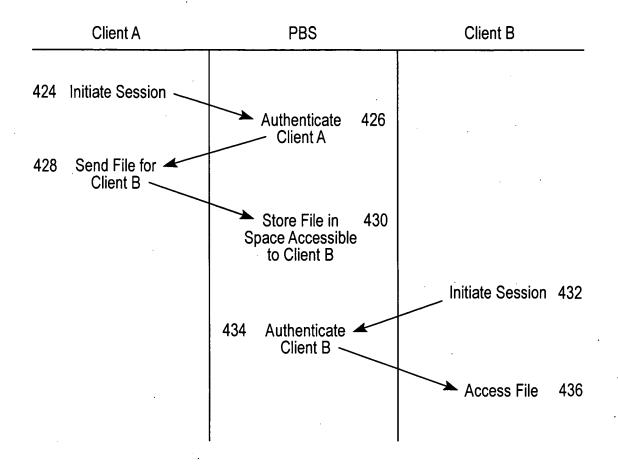Application No.: 10/635,755
Title: Financial Transaction Server With
Process-Based Security
Inventor: Vincent Alan Larsen
Atty. Docket No.: 24089-09280

Client A	PBS	Client B

424   Initiate Session

Authenticate   426
Client A

428   Send File for
Client B

Store File in   430
Space Accessible
to Client B

Initiate Session   432

434   Authenticate
Client B

Access File   436

FIG. 17

Rplacement Sheet
Application No.: 10/635,755
Title: Financial Transaction Server
With Process-Based Security
Inventor: Vincent Alan Larsen
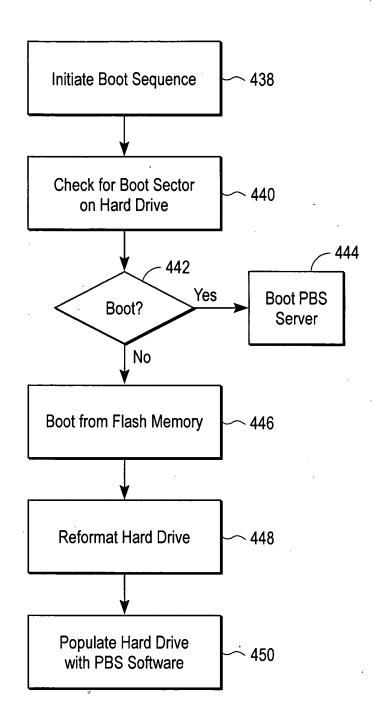Atty. Docket No.: 24089-09280

Initiate Boot Sequence — 438

Check for Boot Sector on Hard Drive — 440

442 — Boot? — Yes → Boot PBS Server — 444

No

Boot from Flash Memory — 446

Reformat Hard Drive — 448

Populate Hard Drive with PBS Software — 450

FIG. 18